UNITED STATES DEPARTMENT OF AGRICULTURE
Rural Electrification Administration
Telephone Engineering Division

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Telephone Engineering Newsletter

Newsletters are intended to provide a means of answering questions that arise in the field and to advise the field of new developments. They are not intended to be instructions nor to replace in any respect the presently-approved channels for establishing requirements and procedures. Suggestions for subjects will be appreciated.

Prelashed Tie Splint Availability

Laboratory and field tests have resulted in REA approval of two kinds of splints for making prelashed ties per Guide Drawing 163-3 in the Telephone System Construction Contract, REA Form 511. One is made of .134 inch diameter extra high strength steel wire, for use on .109 inch diameter steel line wire. The other is made of .114 inch extra high strength 30 percent Copperweld wire, for use on .080 inch diameter Copperweld line wire. Both types are now in quantity production by the Indiana Steel and Wire Company and it is expected that they will be available for the immediate needs of REA borrowers. The size of the splint for .102 Copperweld is being evaluated and will be established in the near future.

Tie Wires for Prelashed Ties

Tie wires for the .134 inch diameter steel splints used on .109 inch diameter steel line wire shall be made of .095 inch diameter tie wire in 20 inch lengths for both Toll Grade and Double Petticoat insulators. Tie wires for the .114 inch diameter Copperweld splints used on .080 inch diameter Copperweld line wire shall be .091 inch diameter annealed Copperweld tie wire also in 20 inch lengths for both Toll Grade and Double Petticoat insulators.

TE&CM Sections Soon to be Issued

The following list shows TE&CM sections and addenda submitted for reproduction since the last issue of this Newsletter.

New	Section 511	Telephone Traffic, Dial Equipment for Toll Centers
Rev.	Section 616	Construction of Open Wire Plant
Rev.	Section 630	Design of Aerial Cable Plant
Rev.	Section 635	Construction of Aerial Cable Plant
Rev.	Section 645	Cable Plant Assembly Units
Add.	Section 701	Station Installations
Rev.	Section 702	Booths and Special Fittings

TE&CM Section of Manual for Parallel Distribution Wire

A text has been prepared and is in reproduction which is entitled "One Pair Parallel Distribution Wire - Field Trial Data". It is to be filed as Section 618 pending its issue in final form. It is intended to be used as a basis for evaluating final details before the formal Section is issued. REA will approve this wire for use on an individual basis where borrowers desire to use it.

Fibreglass Crossarm Trial

REA is purchasing ten fibreglass crossarms and necessary hardware for a trial installation in the Piedmont Telephone Company, Manassas, Virginia. The crossarms will be 10 feet long and 4-1/2 inches in outside diameter. They are a product of Garwood Industries. They will replace brackets where a single circuit exists but where two additional circuits will be erected. The crossarms will be bolted to the pole and braced with standard crossarm braces. One circuit will be placed on glass insulators on standard steel pins. The other two circuits will be attached to the crossarms by means of binding wires to hold down prelashed splints. Comparative insulation tests of the two types of wire supports will be made following the installation. The installation will be made in the next few weeks.

Fuseless Station Protectors

The 1956 Edition of the National Electrical Code is expected to become effective July 1, 1956. It will have revised wording about fuseless station protectors which will permit them to be used in open wire portions of plant under certain additional conditions. This will eventually increase their use in REA borrowers' telephone systems. We are investigating the requirements to enable their use in compliance with the Code. As soon as the practices for their employment have been established, you will be informed.

Electronics in REA Borrowers' Telephone Systems

Recent statistics on wire line carrier equipment indicate that the carrier method of adding versatile and economical plant capable of excellent transmission performance is finding wide application among REA borrowers. Three hundred sixty-seven trunk carrier channels have been installed at a cost of $827,000. Subscriber carrier is still in its infancy so REA is pursuing a policy of advising its borrowers to utilize it on a moderate scale until a better idea is obtained as to what the "grown up" will look like. One hundred forty-seven channels of this type of equipment at a cost of $145,000 were installed when the recent survey was made. REA transmission engineers report activity in this field during design stages of various new products has shown a marked upsurge in the last six months.

Looking toward the future, REA believes that electronic equipment will make a substantial part of rural telephone systems. Transistorized equipment is coming on the scene to perform similar functions to those performed by equipment employing vacuum tubes. At the present time REA transmission engineers are actively working with manufacturers on the development of transistorized equipment.

Subscriber Carrier Tests Continue at Virginia Project

REA transmission engineers are continuing system tests on two types of subscriber carrier equipment working from the Haymarket, Virginia, central office of the Piedmont Telephone Company (Virginia 502). Two channels of Lynch Carrier Systems, Inc., Type B120 subscriber carrier equipment are supplying telephone service to groups of subscribers with full selective ringing by superimposing these channels on previously existing multiparty subscriber lines in an area where costs for adding new subscribers would be very high since the outside plant facilities had previously been filled to capacity. In addition, two channels of Budelman Radio Corporation Type 16A carrier equipment are providing individual line service to two rural business establishments in this area by superimposing these channels on existing party lines previously filled to capacity.

Performance of these carrier channels is being closely observed by REA personnel to determine exactly what annual charges can be expected from the operation of this equipment, to determine the adequacy of protection measures for voice and carrier pass filters and carrier terminals, any possible problems due to overheating of equipment in pole mounted enclosures, the type of adjustments which are required with these two types of carrier equipment at various intervals and the adequacy of existing test equipment for making such adjustments.

Due to the proximity of this location to REA offices in Washington, D.C., plans are being made to test other new types of carrier equipment when they become available, since it affords REA engineers an opportunity to observe very closely and at frequent intervals the performance of such electronic equipment.